

North Korean Shipping: A Potential for WMD Proliferation?

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I S S U E S

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S U M M A R Y The possibility that North Korean ships may be smuggling weapons of mass destruction is a matter of intense concern in the Asia Pacific region and beyond. The few reported incidents of North Korean ships involved in WMD transport are ambiguous; some ships have been engaged in legal weapons trade and some carried “dual-use” goods suitable for use in non-military applications, like agriculture. Ownership of the North Korean merchant fleet is largely private and highly fragmented; most of its ships are small, old, and in poor repair, and are often subject to rigorous scrutiny in foreign ports. The inability of the government to effectively regulate the low-cost, substandard shipping industry creates the risk and incentives to smuggle goods, including WMD. Anti-proliferation efforts should abandon the divisive and unsuccessful Proliferation Security Initiative and concentrate on negotiating North Korea’s entry into international arms control treaties, maintain stringent port controls, and negotiate technical assistance to reduce the vulnerability of the North Korean shipping industry.

An ongoing staple of security concern in the Asia Pacific region is the fear that the sea freight of the Democratic People's Republic of Korea (DPRK or North Korea) will be used for illicit activities—from smuggling of drugs and counterfeit currency to proliferation of weapons of mass destruction (WMD). In 2003, for instance, one North Korean defector testified to the U.S. Congress that North Korea obtained 90 percent of its missile components from Japan using cargo ships that sailed between Wonsan and Niigata. The U.S.-led Proliferation Security Initiative (PSI) provided one response to these fears by seeking to create partnerships in the region to monitor and control the shipping of WMD; its *de facto* primary target was North Korean shipping.¹ Another, in the wake of North Korea's October 2006 nuclear test, was United Nations Security Council Resolution 1718, which among other things prohibited the transfer of nuclear, chemical, and biological weapons, ballistic missiles, and components of WMD to and from North Korea.²

North Korea's major international freight capacity is in the shipping sector. North Korean shipping companies, like all other enterprises, lost state subsidies beginning in the early 1990s and adopted profit maximization as the primary goal of business activities.³ The push factor was government pressure on companies to make money. The pull factor was individuals' need for income for their families. Combined with opportunities for travel denied to most North Koreans, loosening of government surveillance, and inadequate and undeveloped governmental regulatory capacity, it would not be surprising if smuggling occurred. Structural frailties in the North Korean shipping sector contribute to an environment in which owners, managers, and individual crew members are vulnerable to criminal exploitation and hence the potential for smuggling of all sorts of goods—from lumber to WMD.

Yet, perhaps surprisingly, there is little evidence to suggest that the North Korean government systematically transports WMD through its own merchant fleet or engages in smuggling by sea (or air). Also perhaps surprisingly, given the conventional perception of North Korea as a monolithic society in which all activity is controlled by the state, the

North Korean shipping industry is fragmented and privatized as well as being, less surprisingly, nationalist in its ownership, flagging, and crewing patterns. Again, perhaps surprising is that the North Korean shipping industry operates as a conventional participant in global shipping markets and international shipping regimes. In the shipping industry, rather than being isolated from world trading regimes, North Korea is a globalized player, albeit a relatively small one.

How Do We Know Anything About North Korean Ships?

It is relatively straightforward to obtain data about North Korean shipping because of the characteristics of the global shipping industry that lend themselves to transparency. Countervailing tendencies to opacity, also present in global shipping regimes, are more or less absent in the case of North Korean shipping.

Tendencies to transparency. Comprehensive data on merchant ships is collected and collated in international commercial shipping databases, the most reputable of which is the Lloyds Shipping Register.⁴ These are accessible to researchers on payment of a subscription. Data on individual ships, companies, and owners are also available from a variety of open-source databases. These databases allow for a large degree of cross-checking and cross-matching of data.⁵ Open-source information on ships is also available via the public reporting mechanisms of international port control conventions and procedures.⁶

Because of the reporting systems demanded by international laws, conventions, norms, and safety rules, ships that enter foreign ports undergo regular safety inspections.⁷ Regional port control authorities, particularly the Tokyo and Paris MOU secretariats (Memorandum of Understanding on Port State Control), collate and publish data drawn from these inspections online, providing a useful source of data on all ships that call into Asian and European ports.⁸

Tendencies to opacity. North Korean shipping also operates, however, as part of a global shipping industry that helps ship owners who, for commercial or other

It is relatively straightforward to obtain data about North Korean shipping

Rigorous inspection of North Korean merchant ships is likely, even in the ports of allies

reasons, prefer to avoid transparency. It is not unusual, for instance, for ships to be owned in one country and flagged and registered in another. Ship owners may also be separate, and sometimes based in a different country from the business entity that manages and operates the ship. In other cases, the same entity may be both owner and operator. It is also common for names of ships to be changed on a regular basis. International shipping registers can therefore become quickly out of date as ships change owners, managers, names, and flags. A further problem with the shipping registers is that they are not systematically synchronized with each other. Global shipping is a competitive industry, and commercial considerations also promote tendencies to nondisclosure.

The data. All data on North Korean shipping, unless otherwise noted, were obtained from the Lloyd's Register of Ships (LRS), accessed in July and August 2008. Also consulted were the Equasis database and two key regional port control bodies, the Tokyo and Paris MOU secretariats. Figures from the different databases are occasionally incompatible—for instance, some ships are reported in one database and not in another. This is inevitable for any research on global shipping given, among other things, the different

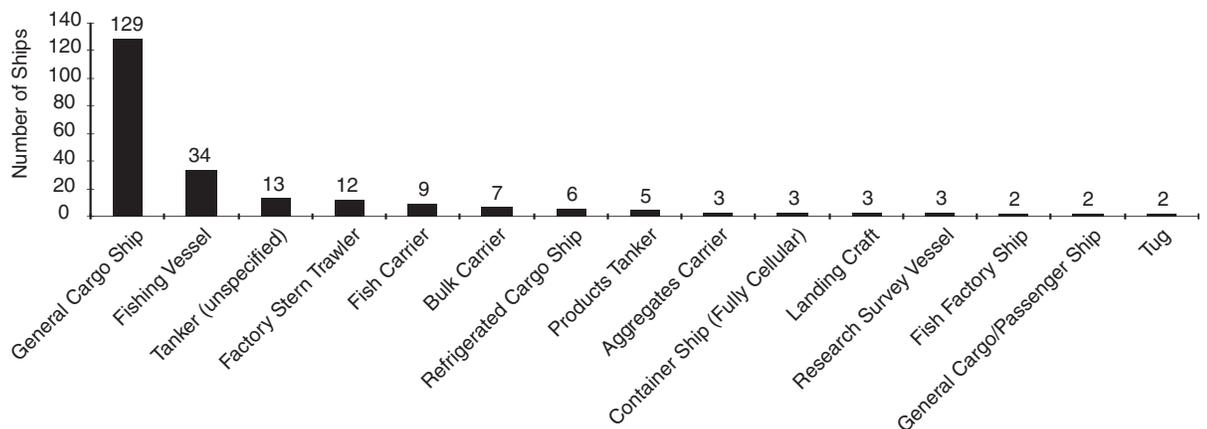
time periods at which data are entered. Ships routinely go in and out of service and sometimes sink. Use of the LRS database for all quantitative analysis, however, ensures consistency of analytical categories.

Why the Concern about North Korean Shipping?

While there are few reports of North Korean ships involved in WMD transshipment, the concern is that if any ships are involved in illicit activity, the state must have directed and managed that activity.

The North Korean shipping sector undoubtedly has the potential to transport controversial or contraband cargo. The merchant fleet is old, small, and in poor condition. This, combined with lax regulation and pressure to make money, provides an enabling environment for owners, managers, and crew to seek profit wherever they can. A disincentive for the use of North Korean merchant shipping to transport WMD, however, is the fact that the international port regimes to which all shipping must adhere make rigorous inspection of North Korean merchant ships likely, including in the ports of allies such as Vietnam, China, and Russia.

Fig. 1. Major categories of ships in North Korea's civilian fleet



Source: Sea-Web: Lloyd's Register of Ships Online (LRS), www.sea-web.com, accessed 7 August 2008.

Note: Nine ships are excluded from figure as these are each in a category of their own: bulk carrier (with vehicle decks), chemical tanker, crude oil tanker, crude/oil products tanker, livestock carrier, passenger ship, passenger and vehicle roll-on/roll-off ship, vegetable oil tanker, and vehicle carrier. Categories shown are standard LRS ship categories.

North Korean ships have been designated “very high risk” in terms of marine safety and security

North Korea’s Merchant Fleet: Small, Unsafe, and Out of Date

The DPRK merchant fleet in August 2008 amounted to just 242 vessels. The total dead-weight tonnage (the conventional measure of cargo-carrying capacity) of the entire fleet is 1,105,246 tons. This fleet makes up a tiny portion of global shipping, just over 1 percent.⁹

General cargo carriers comprise the majority of the North Korean fleet at 129 ships or 53 percent. The next biggest category is that of fishing vessels, with 34 ships or 14 percent of the total. Figure 1 shows the numbers of ships by category of vessel.

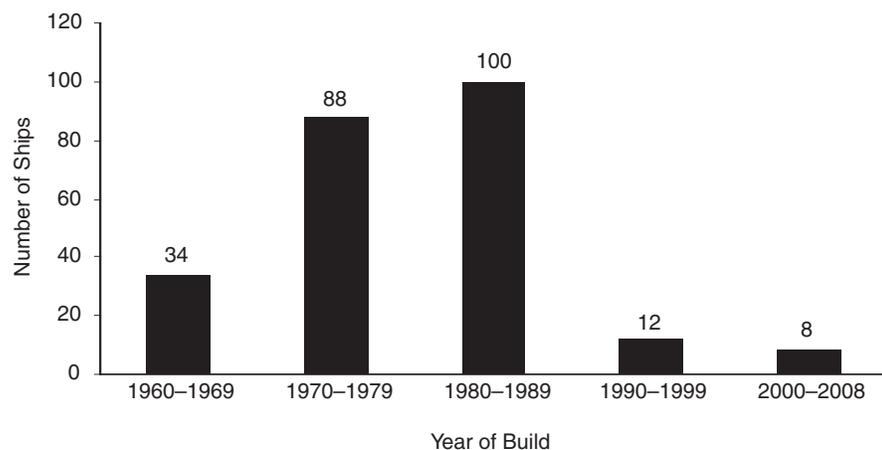
North Korean ships are regularly inspected when they visit foreign ports and equally regularly reported to port control regimes for safety breaches and non-compliance with maritime regulations. The fleet is aging—the average ship was built 29 years ago and is unlikely to have seen anything other than the most basic investment under North Korean ownership. As figure 2 shows, 92 percent of the merchant fleet was built before 1990.

North Korean ships have relatively small cargo-carrying capacities, as figure 3 shows. A massive 70 percent can carry cargoes of only 5,000 tons or less. No ship can carry more than 30,000 tons. These capacities contrast starkly with the 250,000-tonnages that are now common in global shipping.¹⁰

There is no database of conditions onboard ships, but proxy indicators of health and safety can be found in the port control regional monitoring databases. The Tokyo port control records, for example, show that between 1 January and 18 February 2006 there were 44 inspections of North Korean ships in Asian ports. All inspections found deficiencies; in seven cases, the deficiencies were so serious that the ship was detained until they could be remedied. These detentions took place in a number of different ports including Moji, Japan; Haiphong, Vietnam; Nakhodka, Russia; Yantai, China; and Hong Kong.

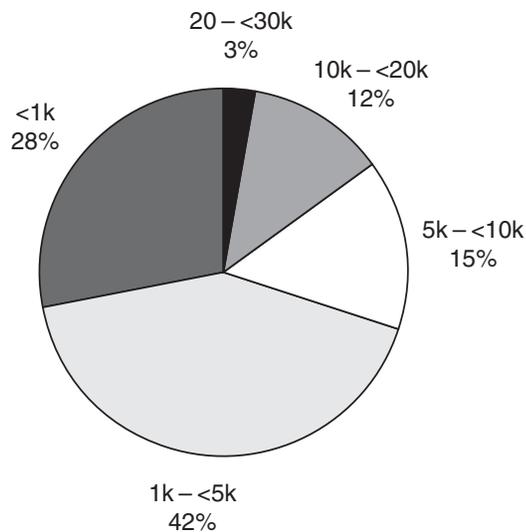
Reports of poor conditions on North Korean vessels come from throughout Asia, including the ports of allies. It is clearly not the case, for example, that Japanese port controls, tightened for political reasons, skewed data artificially by holding North Korean ships to higher standards than other merchant shipping. Instead, all port inspections show that North Korean ships are predominately in poor condition, sometimes lacking adequate communications or lifesaving equipment and in some cases simply not seaworthy. The Paris MOU has designated North Korean ships “very high risk” in terms of marine safety and security; in 2008 they identified the country as one of the three poorest performing flag states—along with Albania and Bolivia.¹¹

Fig. 2. North Korean merchant fleet by year of build



Source: LRS, 7 August 2008.

Fig. 3. Cargo-carrying capacity of North Korean ships in dead-weight tonnage



Source: LRS, 7 August 2008.

Note: This represents the 213 of the fleet's ships for which dead-weight tonnage is known. The remaining 29 ships, mainly fishing vessels, are not large.

North Korean shipping is perhaps best understood as typical of that found in other low-income countries that have found a niche in the bottom tier of what has sometimes been called the two-tier structure of today's globalized maritime industry. The top tier comprises shipping largely from developed states, which is relatively tightly regulated, and where crews work in decent conditions and earn high wages. Shipping in the bottom tier is comprised largely of low-cost carriers, mainly bulk-trade vessels, which are flagged in countries whose registries exist to create revenue for the flagged state, that is, the flag-of-convenience countries. Pay and living conditions are poor but provide seafarers from poor countries with the opportunity to earn hard currency.¹² It would not be surprising if badly paid crews, working in substandard conditions sometimes grasped available opportunities to benefit from ancillary petty, or less petty, illicit trade.

Badly paid crews working in substandard conditions might grasp opportunities to benefit from illicit trade

Ownership and Management

In the North Korean shipping industry management overwhelmingly coincides with ownership, with only 13 ships registered as splitting ownership and management functions. This is not unexpected, given that

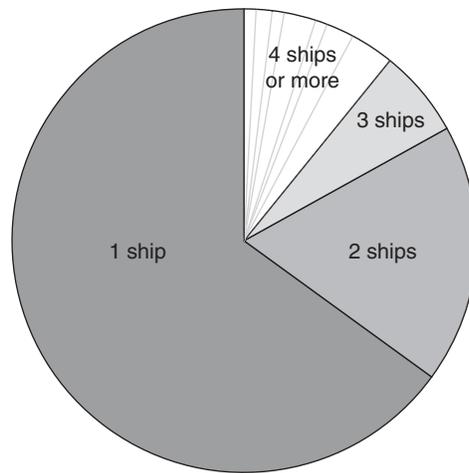
a main function of global shipping management companies is the hiring of crew cheaply from all over the world.¹³ There is little evidence that DPRK-owned ships sail with non-North Korean crews. Even were they to do so, the relatively small scale of North Korean shipping probably makes it more economical for ship owners to hire their own crew rather than employ a third party to do so.

Fragmentation of ownership. The fact that the North Korean shipping industry is extremely fragmented in terms of ownership goes counter to the conventional image of a monolithic North Korea. In August 2008, Lloyd's Register showed that there were 125 North Korean ship owners. Two-thirds of them (82 of 125) owned only one ship. Another 22 owned only two ships, and eight owned three. This left 13 shipping owners owning four ships or more; of these, only three owned more than 10 ships each. Figure 4 illustrates the extreme fragmentation of North Korean ship ownership.

A privatized industry. Even more surprising, perhaps, is the fact that North Korea's shipping fleet is overwhelmingly non-government-owned. According to Lloyd's Register, the government directly owns just one ship and has a beneficial ownership in five more. Direct ownership is of the 1973-built, 12,000-ton general cargo ship, the *Chon Song*. Of the five in which the government possesses a beneficial interest, two are owned by the South Hamgyong provincial government—the 2,500-ton general cargo ship, the *Paek Han San*, built in 2003, and the 500-ton fishing vessel, the *Sin Pung*, built in 1960. The three remaining cargo ships in which the government has a beneficial interest are the 14,000-ton general cargo ship, the *Tae Dong*, built in 1983; the 10,000-ton container ship, the *Kum Rung 7*, built in 1972; and the 3,000-ton aggregates carrier, the *Kum Rung 5*, built in 1991.

The *Tae Dong* is registered as owned and managed by the Korea Taedong Shipping Co., which is in turn registered as a subsidiary of the North Korean government. The *Kum Rung 7* and the *Kum Rung 5* are both registered as owned and managed by the Korea Rungra 888 Trading Co., which is also registered as a

Fig. 4. North Korean shipping companies by size of fleet



% of companies	Size of fleet
65	1 ship
18	2 ships
6	3 ships
3	4 ships
2	5 ships
1	7 ships
2	8 ships
1	11 ships
1	13 ships
1	14 ships

Source: LRS, 7 August 2008.

subsidiary of the North Korean government. Lloyd's Register shows that the North Korean government has an additional 40 subsidiary companies, but none of these as of August 2008 owned ships (suggesting a prior government disinvestment in the shipping sector).

Private ownership of North Korean ships is not a new phenomenon. In 1999, a Singapore court noted that North Korean ship owners should not be considered as controlled or owned by the North Korean government just because they were domiciled in that country.¹⁴ In the same judgment, the court noted the provision of North Korean law that specifically allowed ships to be owned by nongovernmental

cooperative associations. The country's 1998 constitution specifically allowed nonstate entities to own property. The July 2002 economic reforms, that were a consequence of *de facto* privatization beginning in the 1990s and *de jure* cause of privatization from 2002 onward, extended and promoted nonstate entrepreneurship. It is logical to assume that those enterprises best able to exploit foreign trade opportunities—that is, the shipping industry—would have taken advantage of the 2002 economic reform legislation.

The National Dimension—Flagging of North Korean Ships

Merchant shipping has for the most part chosen to fly the home flag. This is unusual for the global shipping industry, in which over 64 percent of shipping (measured by tonnage or cargo-carrying capacity) is registered in countries other than that where the ship has a national connection through, for instance, ownership or management.¹⁵

As of August 2008, of the 242 DPRK-owned merchant ships, 223 (92 percent) were flagged at home (see figure 5).¹⁶ The flag state of eight of the remaining 19 ships was not recorded by the Lloyd's Register. If these eight ships were also flying the North Korean flag—which is very possible—this would mean that an overwhelming proportion of North Korean ships, some 231 of 242, were flying the home flag. Irrespective of the unknowns, however, what these figures indicate is that most of the country's ship owners have not chosen to take advantage of the anonymity that flying another flag might allow them.

Foreign partnerships. As of 2008, North Korean ships and ship owners had relatively few institutionalized foreign partnerships. Those that existed involved ships that were flagged abroad. The 11 known foreign flag states for DPRK ships were Sierra Leone (3); Mongolia (2); Panama (2); with Belize, China, Georgia and, perhaps rather unexpectedly, South Korea flagging one ship each. Only one ship owned and flagged in North Korea, the *Lady Belinda*, had a partnership agreement with a foreign manager, in this case located in Greece.

Global Entrepreneurs

Shipping is by definition a globalized industry, and the North Korean shipping industry is a full participant in five different ways. First, North Korean ship owners buy and sell ships on the international market. Second, they insure their ships abroad (for instance, in London). Third, North Korean managers and crew call at ports around the world (except the United States, whose ports are closed to North Korean ships). Fourth, crew and managers meet with counterparts from other countries both in home ports and abroad. Fifth, North Korean shipping officials have contact with shipping operators from other countries through the development of the DPRK as a flag-of-convenience registry.

Although North Korea is still building ships, its capacity is small and the industry's existing ships have necessarily been purchased from others around the world. North Korean ships are more likely to have been built in Japan than at home. The country is also buying ships built elsewhere. One shipping company owns a ship built in China as recently as 2005. North Korea's three "new build" acquisitions of 2008 were built at home, but were small—10,000 tons on average. Figure 5 indicates the range of countries where North Korean ships were built.

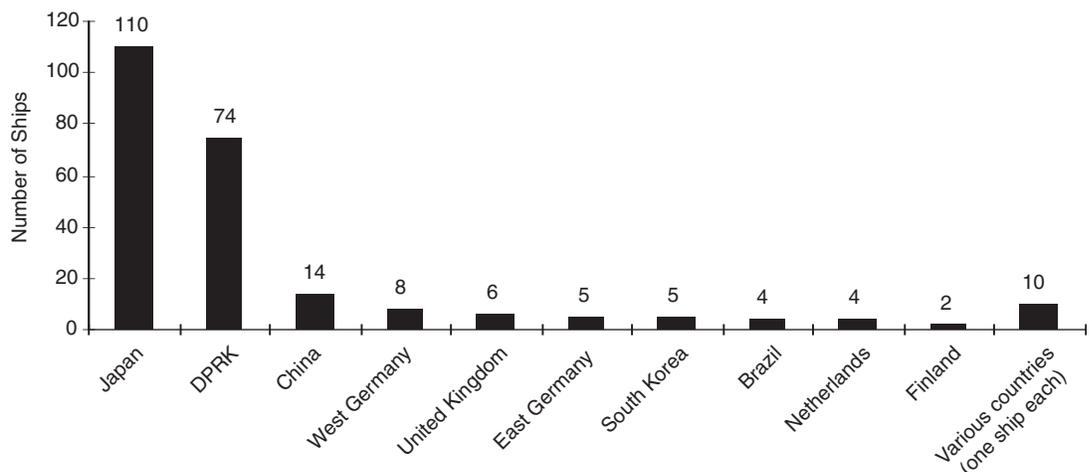
Most of North Korea's sea trade remains in Asia; it includes oil shipped from Russia's Asian ports and a regular goods trade with China and Vietnam. Sea

movements are not confined to Asia; regular port calls are recorded in Europe, Africa, the Middle East, and Latin America. The DPRK is situated on the edge of a busy network of sea lanes in Northeast Asia. Its ships use the trade routes between Northeast Asia and Southeast Asia, through which over half of the world's merchant marine regularly sails—the same trade routes as its prosperous trading neighbors, including Japan, South Korea, and China.

Owners and crew have regular contact with international traders, in ports of call and in home ports. The DPRK has eight international ports; Nampo on the west coast and Chongjin on the east are by far the most important. Nampo is important for long-distance shipping; its ships travel to South Korea, China, the Middle East, Africa, and Europe. Chongjin and Wonsan are bases for trade with Russia and (before it instituted sanctions) Japan. Chongjin takes a 24 percent share of the DPRK's foreign trade and is home to a resident Chinese consul, whose main function is to serve the Chinese traders operating in the northeast of the country.¹⁷ Nampo, whose share of North Korean foreign trade is around 30 percent, is a bustling port in which crew congregate from all over the world (including sometimes from United States ships delivering food grain). Both Chongjin and Nampo have seamen's clubs, catering to foreign crews but also to North Koreans who need to meet with foreigners engaged in the shipping trade.

Most North Korean ship owners have not chosen to take advantage of the anonymity of flying another flag

Fig. 5. North Korean ships by country of build



Source: LRS, 7 August 2008.

DPRK-flagged ships face fewer regulatory constraints . . . but they are likely to be inspected during most port calls

Finally, North Korea offers a flag-of-convenience shipping registry. The largest flag-of-convenience shipping registries are located in Panama and Liberia, although many countries offer flag-state facilities to foreign ships.¹⁸ The flag-state industry is not confined to poor states. The United Kingdom and Germany, for example, have set up less closely regulated “second” registries in an effort to attract international ship registrations.¹⁹

According to the International Transport Workers’ Federation, ships are understood to be flying flags of convenience “where beneficial ownership and control of a vessel is found to lie elsewhere than in the country of the flag the vessel is flying.”²⁰ The Federation also categorizes a state as a flag-of-convenience state on health and safety grounds. This is because flag-of-convenience states do not always enforce minimum ship safety standards, may overlook poor working and living conditions, including long hours and low pay, and do not ensure health and welfare support.

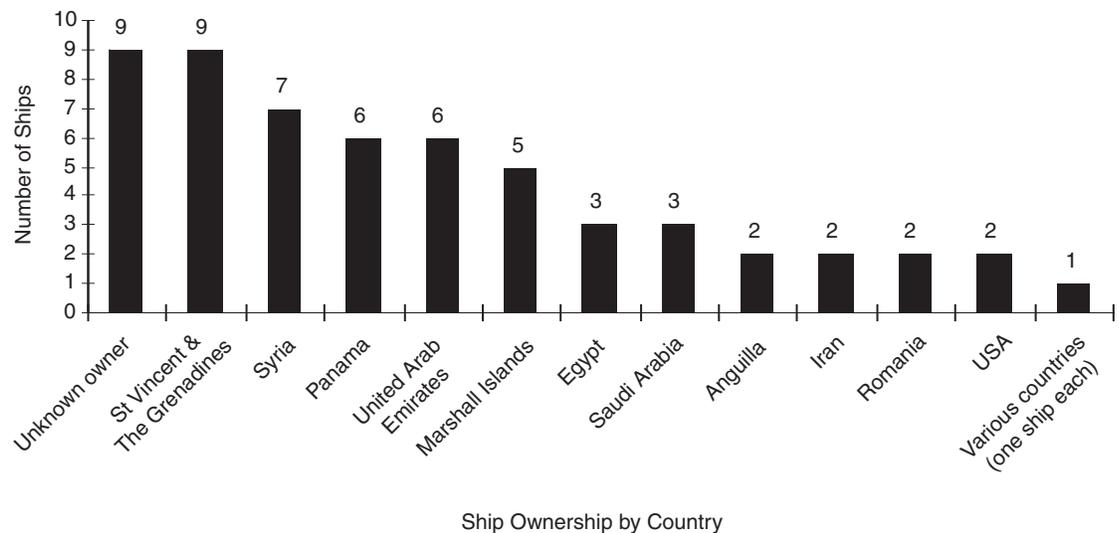
In total, 291 merchant ships were listed in Lloyd’s Register as being flagged in North Korea. Of these, 223 were DPRK-owned, 67 were foreign-owned, and one had unknown ownership. Figure 6 shows the ownership location of the foreign-owned ships flagged

by the DPRK. Interestingly, two U.S. ships are among those flagged in the DPRK.

DPRK revenues from its international flagging operations are not known, but Mongolia, for instance, generates around \$200,000 a year from its 260 flagged ships, and it would not be unreasonable to suggest that North Korea might earn a similar sum. Flagging of foreign ships is not therefore a major source of income for the DPRK.

Foreign owned ships flagged in North Korea face fewer regulatory constraints than ships flagged in most other countries, but they are likely to be inspected during most port calls because of the DPRK’s international standing as a high risk country in terms of maritime safety standards. These ships therefore risk additional costs because of delay from detentions by port authorities. The reasons that foreign ships fly the North Korean flag need further research, but it would be reasonable to speculate that they are either economic or historical or a mixture of the two. For an old ship soon to be taken out of commission, it may cost more to transfer the flag than to retain it. Similarly, an owner or manager with a past or present business relationship with a North Korean owner (or manager) may choose to retain the flag. These suggestions are speculative, but the disadvantages of

Fig. 6. Foreign-owned ships flagged in North Korea



flying the DPRK flag are manifest, and there is no evidence that it has become an attractive flag of convenience in the international shipping market.

WMD Incidents Involving North Korean Shipping

Over the years, the U.S. and Japanese governments in particular have expressed concerns about DPRK government shipments of WMD and their components. Informing these concerns are statements from North Korean defectors and intelligence reports. Somewhat surprisingly, in the light of the global visibility of such claims through reporting in the international media, it is difficult to find hard data on the alleged incidents, and indeed it is hard to find references to more than a tiny number of incidents—the same examples tend to be iterated in all accounts of North Korean WMD proliferation. Table 1 lists the incidents reported in the international press as involving North Korean ships and the transportation of WMD for which there are significant data.

In the cases for which ship data are known, the ships were old (built in 1974, 1980, and 1981), small, general-purpose cargo carriers. The owners were Korea Daehung Shipping, Korea Kangsong Shipping, and Sohae Sonbak. Korea Kangsong has the largest fleet in the country at 14 ships, but it shows few signs of prosperity, with an average ship age of 32 years and an average cargo-carrying capacity of less than 1,500 tons. Sohae Sonbak has 11 ships, the third highest number in North Korea, and its fleet has a combined cargo-carrying capacity of 223,000 tons, about a quarter of the country's total. Its ships have an average size of 13,000 tons and an average age of 28 years. Korea Daehung Shipping has five ships with an average age of 27 years.

The ship most regularly mentioned in the international media as a possible conduit of illicit goods is the passenger ferry *Man Gyong Bong 92*, owned and managed by the Daizin Shipping Company, headquartered in Pyongyang. Until Japan stopped North Korean ships entering its ports in 2006, the *Man Gyong Bong 92* provided a regular passenger and goods service between the two countries. No instance of smuggled goods was ever identified by the Japanese authorities, despite rigorous port inspections. The

repeated allegations of the ship's involvement in smuggling WMD components, emerging mainly from defectors and unnamed U.S. and Japanese intelligence sources, seemed to be based on an assumption that all commercial and financial transactions with Japan, from the purchase of secondhand bicycles to the transfer of remittances from North Koreans in Japan to relatives in the DPRK, could be used to sustain indirectly North Korean WMD programs.

Other recent incidents involved “dual use” goods for which a link to WMD is possible but not certain. Sodium cyanide is a good example of a dual-use product. Sodium cyanide has legitimate applications in mining and agriculture, both of which are important industries in the country and both of which are dependent on imported chemicals, but it can also be used in the manufacture of the nerve gas tabun. In 2004, a South Korean business exported 107 metric tons of the chemical to Dandong, China, knowing that it would be re-exported to North Korea. The businessman involved received a jail term of one and a half years as sodium cyanide is classified by the South Korean government as a strategic material.

Foreign-owned ships have also been suspected of smuggling WMD components to and from North Korea. One such incident was the April 2003 seizure of the French ship *Ville de Virgo* by German police who had discovered that the ship was carrying 214 aluminum tubes with false end-user certificates and whose destination was North Korea.²¹ The tubes could have been used as gas-centrifuge components for enriching uranium for nuclear weapons (or as parts for bicycle frames or aircraft). The ship was forced to stop at the Egyptian port of Alexandria where, with the cooperation of the Egyptian government, the tubes were unloaded and returned to Hamburg.

In recent years, perhaps the most notorious incident involving DPRK shipping was the arrest of the crew of the *Pong Su* in 2003, after the capture of heroin and drug smugglers who had landed off Melbourne, Australia, from the North Korean ship.²² The crew testified that the North Korean ship had been hired by a Malaysian drug syndicate that had told the ship owner and crew that the purpose of the voyage was to transport secondhand cars. In 2006, the

Despite the visibility of claims of DPRK WMD shipments, it is difficult to find hard data on the alleged incidents

Table 1. North Korean ships suspected of transporting WMD components

Ship	Incident
<p><i>Dae Hung Ho</i> (now reportedly <i>Xoh Paek</i>)</p> <ul style="list-style-type: none"> • 6,066 tons, built 1974 • owner: then Korea Daehung Shipping, now Korea Pongsu Shipping • flag: then DPRK, now China 	The vessel, suspected of carrying Scud missiles, had been monitored by the U.S. navy while at sea. It arrived in the Iranian port of Bandar Abbas on 9 March 1992. The cargo was never officially determined. ^a
<p><i>Ku Wol San</i> (now reportedly <i>Sun Grisan 9</i>)</p> <ul style="list-style-type: none"> • Capacity, year of build, owner, and flag unknown. 	Missile parts and missile designs were found on board on 25 June 1999 with fictitious end-user certificates. The crew was arrested by Indian authorities but released in 2000, and the case was not prosecuted. ^b
<p><i>So San</i> (now <i>Chang Dok</i>)</p> <ul style="list-style-type: none"> • 3,586 tons, built 1981 • owner (then and now): Korea Kangsong Shipping • flag: then Cambodia, now DPRK 	The vessel, bound for Yemen, was boarded by the Spanish navy on 9 December 2002. U.S. and Spanish officials searched the ship and found weapons and chemicals. The ship was allowed to proceed to Yemen; the U.S. stated the cargo was a legal weapons shipment. ^c
<p><i>Be Gae Bong</i></p> <ul style="list-style-type: none"> • 9,769 tons, built 1980 • owner (then and now): Sohae Sonbak • flag (then and now): DPRK 	Taiwanese authorities boarded the ship at Kaohsiung on 13 August 2003 and took off 158 barrels of phosphorous pentasulfide, a chemical that can be used to make rocket fuel. DPRK authorities protested that the chemicals were for legitimate industrial purposes. The ship was allowed to sail. ^d

^a Barbara Rudolph, "High Seas the Mysterious Stealth Ship," *Time*, 23 March 1992, www.time.com/time/magazine/article/0,9171,975131,00.html.

^b Andreas Persbo, "The Proliferation Security Initiative: Dead in the Water or Steaming Ahead?" British American Security Information Council, 12 December 2003, www.basicint.org/pubs/Notes/BN031212.htm. Neither ship name is recognized by LRS.

^c Brian Knowlton, "Ship Allowed to Take North Korea Scuds on to Yemeni Port: U.S. Frees Freighter Carrying Missiles," *International Herald Tribune*, 12 December 2002, www.iht.com/articles/2002/12/12/scuds_ed3_.php.

^d Michael Richardson, "A New Coalition To Keep WMD Out of Terrorists' Hands," 2004, reproduced on <http://yaleglobal.yale.edu/display.article?id=3838&page=2>

court ruled that the four North Korean crew charged with trafficking in heroin were innocent and set them free, after they had served three years in prison.

Even the most well-known incidents involving North Korean ships in alleged smuggling do not demonstrate deliberate malfeasance. There are, however, potentially major rewards for profit-seeking shipping operators. Absent domestic regulatory capacity, and with economic incentives propelling owners and crew to seek every possible trade opportunity, the conditions are ripe for all sorts of freelance activity, legal and illegal.

North Korean Shipping and WMD Proliferation

There is little hard evidence that the government of North Korea is involved in the illicit shipping of WMD or components of WMD. DPRK shipping incidents involved either legally traded weapons or

chemicals with both military and civilian applications. The government has other ways to transport WMD besides using its own ships. State-to-state trade, for example with Iran or Pakistan, can be carried out using aircraft or ships belonging to allies. The DPRK government has no record of selling WMD to terrorist groups, and there are no serious allegations from any source, let alone evidence, that it is doing so now. The very high likelihood of inspection during port calls abroad acts as a disincentive for the use of DPRK-owned and -flagged ships for transport of illicit cargo.

North Korean shipping is, however, vulnerable to criminal exploitation by owners, managers, and individual crew members because of the structure of the shipping industry. Working conditions on the ships are poor, official wages for North Korean sailors are likely minimal, and opportunities and incentives for transporting illicit cargo are probably plentiful.

There are many small shipping operators, and businesses are now expected to make profits rather than relying on the state for income; profit maximization has become the primary goal for ship owners and crew. The North Korean government is much less able to exert regulatory control than it was before the 1990s, thus allowing more opportunity for illicit trading activities. These are arguably more likely to involve smuggling of civilian goods, including possibly narcotics, than weapons of mass destruction.

Policy Implications

Current U.S. policy regarding the threat of weapons proliferation by North Korean shipping is almost entirely focused on the Proliferation Security Initiative (PSI). This is a U.S.-led effort, begun in 2003, that focuses on interdictions at sea of ships carrying WMD. The PSI was developed outside existing multilateral institutions such as the United Nations, although the U.S. government has encouraged states to join the initiative—arguing in 2008 that 92 countries supported the initiative. The PSI is controversial legally and in terms of its effectiveness.²³ The legality of interdicting ships in international waters is ambiguous. Key states, including North Korea's neighbors, South Korea and China, have refused to sign up, weakening the PSI's effectiveness in targeting North Korean shipping. The U.S. Government Accountability Office has identified numerous shortcomings in the implementation of the PSI, including the absence of budgets, procedures, and a written strategy.²⁴

The U.S.-led PSI has been expensive, inefficient, and arguably unsuccessful

The PSI has been expensive, inefficient, and arguably unsuccessful, and has caused unnecessary dissension among partners who might otherwise have collaborated on counter-proliferation efforts. Its funding should be reallocated to support nonproliferation objectives that could be negotiated within the framework of the ongoing Six-Party Talks on North Korea's nuclear program. Efforts should focus on mitigating the structural weaknesses and vulnerabilities of the DPRK's shipping industry and preventing potential criminal activities by ship owners, managers, and crews. Stringent port controls should be maintained, perhaps in combination with technical assistance to North Korea to improve its maritime practices.

In the medium to long term, the DPRK will need to redevelop its economy so that, among other things, the government will no longer need to raise money by offering a flag of convenience. Economic development would also make it less necessary for ship owners, managers, and crews to earn hard currency from smuggling. Economic redevelopment will, of course, depend on foreign capital investment—and this will in turn depend upon the resolution of political tensions in Northeast Asia.

Not all transportation of WMD is against international law. Putting a halt to legal WMD transportation is a difficult matter and would be most likely to occur subsequent to entry of the DPRK into international nonproliferation conventions. The signing up of the DPRK to relevant international conventions is in turn only likely subsequent to or as part of a political settlement to the current security crises on the Korean Peninsula.

Notes

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² Mark J. Valencia, "Maritime Interdiction of North Korean WMD Trade: Who Will Do What?" Nautilus Institute, Policy Forum Online 06-98A, 3 November 2006, www.nautilus.org/fora/security/0698Valencia.html.

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⁴ Lloyd's Register-Fairplay Ltd., Sea-Web: Lloyd's Register of Ships Online, www.sea-web.com—referred to subsequently in the text as LRS or Lloyd's Register.

⁵ A useful cost-free register is the World Shipping Register at <http://e-ships.net/ships.htm>. Another is the more difficult to search European Commission-funded Equasis website at www.equasis.org.

⁶ See for example the databases of the Paris Memorandum of Understanding on Port State Control (www.parismou.org) and the Tokyo Memorandum of Understanding on Port State Control in the Asia-Pacific Region (www.tokyo-mou.org).

⁷ Elizabeth R. DeSombre, *Flagging Standards: Globalization and Environmental, Safety, and Labor Regulations at Sea* (Cambridge, MA: MIT Press, 2006).

⁸ See note 6.

⁹ www.geographic.org, on www.immigration-usa.com/world_fleet.html. North Korea figures are from LRS 2008.

¹⁰ DeSombre, 79.

¹¹ Paris MOU, "Targeting Lists 2007," 23 June 2008, www.parismou.org/ParisMOU/Whats+New/News/News+Detail/xp/selectedcontentitem.2876/default.aspx (accessed 9 August 2008).

¹² Clifford B. Donn, "Globalization, Technological Change, and Employment Developments in the U.S. and World Maritime Industries" (paper presented at the Collective Bargaining Interest

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¹³ DeSombre, *Flagging Standards*, 81.

¹⁴ [2000] 1 Lloyds Rep. 511, Singapore Court of Appeal, 17 November 1999, mimeo.

¹⁵ DeSombre, *Flagging Standards*, 3.

¹⁶ Lloyd's Register-Fairplay Ltd., Sea-Web: Lloyd's Register of Ships Online, accessed 6 August 2008.

¹⁷ Asia Trade Hub, www.asiatradehub.com/n.korea/ports.asp.

¹⁸ DeSombre, *Flagging Standards*, 71.

¹⁹ DeSombre, *Flagging Standards*, 47.

²⁰ International Transport Workers' Federation, "Flags of Convenience Campaign," www.itfglobal.org/flags-convenience/index.cfm.

²¹ Valencia, "The Proliferation Security Initiative," 36.

²² Leonid Petrov, "Criminality Part of North Korea's Survival Strategy," 25 March 2008, OhmyNews Korea, http://english.ohmynews.com/articleview/article_view.asp?article_class=2&no=382170&rel_no=1.

²³ Mark J. Valencia, "The Proliferation Security Initiative: A Glass Half-Full," *Arms Control Today*, June 2007, www.armscontrol.org/act/2007_06/Valencia.

²⁴ Government Accountability Office, *Nonproliferation: U.S. Agencies Have Taken Some Steps, But More Effort Is Needed to Strengthen and Expand the Proliferation Security Initiative*, GAO-09-43 (Washington DC: Government Accountability Office, November 2008).

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